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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/028,455

12/19/2001

John W. Mates

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03/30/2005

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EXAMINER

LUU, THANH X

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 03/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/028,455

Applicant(s)

MATES, JOHN W.

Examiner

Thanh X. Luu

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2005.
2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3,4,10 and 23-33 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 3,4,10,23,24,26,27 and 29-33 is/are rejected.
7) ☒ Claim(s) 25 and 28 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 01/2005.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to amendments and remarks filed January 5, 2005. Claims 3, 4, 10 and 23-33 are currently pending.

Information Disclosure Statement

1. The crossed out references provided in information disclosure statement filed January 31, 2005 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the publication date is unknown. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 3, 10 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Watanabe et al. (U.S. Patent 6,075,240).

Regarding claims 3, 10 and 29, Watanabe et al. disclose (see Fig. 14) an apparatus and method, comprising: a plurality of photodetector elements (on 114) disposed on a semiconductor substrate; and a compound light directing member (110) comprising a light pipe bundle or fiber optic elements, at least some of the light pipes to individually direct light energy from one or more sources onto one or more of the photodetector elements, outputs of the photodetector elements being electrically coupled using a compound eye wiring pattern (wiring pattern on 114) such that an image associated with one or more sources may be synthesized at output circuitry, the photodetector elements and compound light directing member together comprising a substantially planar artificial compound eye.

4. Claims 3, 10 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Tafas et al. (U.S. Patent 6,320,174).

Regarding claims 3, 10 and 29, Watanabe et al. disclose (see Fig. 14) an apparatus and method, comprising: a plurality of photodetector elements (on CCD at 520) disposed on a semiconductor substrate; and a compound light directing member (510) comprising a light pipe bundle or fiber optic elements, at least some of the light pipes to individually direct light energy from one or more sources onto one or more of the photodetector elements, outputs of the photodetector elements being electrically coupled using a compound eye wiring pattern (inherent readout wiring pattern on CCD) such that an image associated with one or more sources may be synthesized at output

circuitry, the photodetector elements and compound light directing member together comprising a substantially planar artificial compound eye.

5. Claims 3, 4, 10, 29, 32 and 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Korein (U.S. Patent Application Publication 2002/0096629).

Regarding claims 3, 4, 10, 29, 32 and 33, Korein discloses (see Fig. 3) an apparatus, comprising: a plurality of photodetector elements (on 16) disposed on a semiconductor substrate; and a compound light directing member (14) comprising a light pipe bundle or fiber optic elements, at least some of the light pipes to individually direct light energy from one or more sources onto one or more of the photodetector elements, outputs of the photodetector elements being electrically coupled using a compound eye wiring pattern (inherent readout wiring pattern on sensor) such that an image associated with one or more sources may be synthesized at output circuitry, the photodetector elements and compound light directing member together comprising a substantially planar artificial compound eye. Korein also discloses (see Fig. 3) first and second light pipes having an external surface that is at a first and second angle relative to the substrate to receive light from a first and second direction different from each other. Further, since the sensor is in the form of an integrated package, the fiber optic bundle provides an optical window as claimed.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 23, 24, 26, 27, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tafas et al.

Regarding claims 23, 24, 26, 27, 30 and 31, Tafas et al. disclose the claimed invention as set forth above. Tafas et al. also disclose (see Fig. 5) the light directing member providing an optical window for an integrated circuit package including the photodetector elements. Tafas et al. do not specifically disclose the distances as claimed. However, Tafas et al. also teach (see Fig. 5) coupling to the photodetector elements to the light directing member with an epoxy and (see Fig. 1) the distance between the light directing member depends on the focal length of the lens. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a .0001 meter distance and .01 meter distance as claimed in the apparatus and method of Tafas et al. in order to reduce light loss to improve detection, and obtain better focusing.

Allowable Subject Matter

8. Claims 25 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Applicant's arguments filed January 5, 2005 have been fully considered but they are not persuasive.

Applicant asserts that Watanabe fails to disclose a compound eye wiring pattern because Watanabe discloses no electronics. Examiner disagrees. It is unclear how an image sensor functions without electronics. Fig. 14 of Watanabe clearly discloses wiring patterns (not labeled) on the substrate 114. As understood, such wiring patterns are "compound eye" wiring patterns since the structure of Watanabe is the same as Applicant's claimed "compound eye." Furthermore, the terms "compound eye" acts simply to label the type of wiring pattern and has no structural significance.

Applicant also asserts that Tafas et al. and Korein do not disclose a compound eye wiring pattern. Examiner disagrees. Such a wiring pattern is inherent. That is, a wiring pattern has to exist among or in between the photodetectors for readout. Further, since the wiring pattern meets the structural limitations of the claim, as understood, it is a "compound eye" wiring pattern.

Applicant also asserts that the prior art does not disclose a substantially planar compound eye. Examiner disagrees. As understood, the term "substantially" is relative and compared to very thick or tall devices, the devices of the prior art are substantially planar.

Thus, as set forth above, this rejection is proper.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

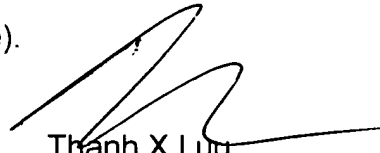
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is 571-272-2441. The examiner can normally be reached on M-F 6:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thanh X Luu
Primary Examiner
Art Unit 2878